WHAT IS CLAIMED IS:

1. A storage area management method of a computer system having a storage area to store data, said method comprising steps of:

defining a range in which the data can be arranged (hereinafter the range in which data can be arranged is referred to as the "possible data arrangement range");

defining range information to judge whether or not data to be stored can be arranged in said storage area;

judging whether or not said possible data arrangement range is within the range indicated by said range information.

outputting whether or not said possible data arrangement range is within the range indicated by said range information.

2. A storage area management method according to claim 1, said method comprising steps of:

designating a range for storing the data;

judging whether or not the range indicated by the said range information of said storage area is within said designated range by referring the range information of said designated range;

and

outputting whether or not the range indicated by the said range information of said storage area is within said designated range.

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3. A storage area management method according to claim 1, said method further comprising the steps of:

designating a capacity for storing the data;

judging whether or not said storage area has free

10   space equal to or greater than said designated capacity;

outputting whether or not said storage area has free space equal to or greater than said designated capacity.

4. A storage area management method according to

15   claim 1, said method further comprising the steps of:

defining data in a copy-source storage area and a copy-destination storage area;

accepting a request to copy the data that is included in said copy-source storage area to said copy-

20   destination storage area from said copy-source storage area;

copying said data in said copy-source storage area to said copy-destination storage area in accordance with judgment from the result of said outputting step,

wherein said defined possible data arrangement range is designated for data in a copy-source storage area,

and said defined range information is designated for a copy-destination storage area.

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5. A storage area management method according to claim 4,

wherein in the step of copying the data in said copy-source storage area to said copy-destination storage area, said data in said copy-source storage area is copied in case of judging that the range indicated said range information for said copy-destination storage area is within the said possible data arrangement range for the data in said copy-source storage area.

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6. A storage area management method according to claim 4,

wherein in the step of copying the data in said copy-source storage area to said copy-destination storage area, information of the possible data arrangement range of the data in said copy-source storage area is also copied.

7. A storage area management method according to claim 4,

wherein pre-defined processing is executed if it is
judged that the range indicated by the range information
defined for said copy-destination storage area is not in
the possible data arrangement range of the data in said
5   copy-source storage area.

8. A storage area management method according to
claim 1, said method further comprising the steps of:
obtaining a range in which all data in a storage area
10 can be arranged (hereinafter the range is referred to as
the "typical range information");
wherein said possible data arrangement range is
defined as said typical range information in the step of
defining said possible data arrangement range.
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9. A storage area management method according to
claim 8,
wherein, in the step of obtaining said typical range
information,
20   the typical range information of a storage area
included in said storage area, or, a possible data
arrangement range of data in said storage area is obtained
in advance, and
a logically narrower area when the typical range

information of the storage area included in said storage

area is compared with the possible data arrangement range

of the data in said storage area, is designated as the

typical range information of said storage area.

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10. A storage area management method according to

claim 4,

said method further comprising the steps of:

acquiring a data capacity of said storage areas;

10   judging whether or not said copy-destination storage

area has free space equal to or greater than the data

capacity of said copy-source storage area; and

wherein said data is not copied if said copy-

destination storage area has no free space equal to or

15   greater than the data capacity of said copy-source storage

area.

11. A data processing system having a storage device,

wherein said storage device includes two or more

20   storage areas;

wherein said data processing system includes the

first storage area for which a possible data arrangement

range of data stored in said first storage area is defined,

and the second storage area for which range information

that is to be judged for storing data is defined;

wherein said data processing system designates said first storage area and said second storage area and judges whether or not said possible data arrangement range of said

5 first storage area is within the range indicated by said range information of said second storage area; and

wherein said data processing system outputs whether or not said possible data arrangement range of said first storage area is within the range indicated by said range

10 information of said second storage area.

12. A data processing system according to claim 11, further comprising

a management computer for controlling said storage

15 device,

wherein said management computer defines a possible data arrangement range for data in storage areas and a range information of storage areas .

20 13. A data processing system according to claim 11, further comprising

a host computer for accessing said storage device,

wherein said host computers judges whether or not said possible data arrangement range of said first storage

area is within the range indicated by said range
information of said second storage area, and accesses data
of storage areas in said storage devices in accordance with
the result of judging;

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14. A data processing system according to claim 11,
wherein logical volumes are formed on said volumes.

15. A data processing system according to claim 14,
10 wherein file systems are formed on said logical
volumes.

16. A data processing system according to claim 11,
wherein a data processing system defines data in a
15 copy-source storage area and a copy-destination storage
area;
wherein a data processing system accepts a request to
copy the data that is included in said copy-source storage
area to said copy-destination storage area from said copy-
20 source storage area;
wherein a data processing system copies said data in
said copy-source storage area to said copy-destination
storage area judging from the output result of said data
processing system;

wherein said defined possible data arrangement range

is designated for data in a copy-source storage area,

and said defined range information is designated

for a copy-destination storage area.

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17. A data processing system according to claim 11,

wherein a data processing system obtains typical

range information for a copy-source storage area; and

wherein a data processing system defines said

10   possible data arrangement range as said typical range

information.

18. A data processing system according to claim 11,

wherein a data processing system defines group

15   definition information, and said possible data arrangement

information can be defined by said group definition

information.

19. A storage device including two or more storage

20   areas;

wherein said storage device includes the first

storage area for which said storage device defines a

possible data arrangement range of data stored in said

first storage area, and the second storage area for which

said storage device defines range information that is to be judged for storing data;

wherein said storage device designates said first storage area and said second storage area, and said storage

5   device judges whether or not said possible data arrangement range of said first storage area is within the range indicated by said range information of said second storage area; and

wherein said storage device outputs whether or not

10   said possible data arrangement range of said first storage area is within the range indicated by said range information of said second storage area.

20. A storage device according to claim 19,

15   wherein said storage device designates a capacity for storing the data;

wherein said storage device judges whether or not said storage area has free space equal to or greater than said designated capacity;

20   wherein said storage device outputs the result of whether or not said storage area has free space equal to or greater than said designated capacity.

21. A data processing system comprising of:

a source storage device which has a volume stored includes a copy-source storage area;

a destination storage device which has a volume stored includes a copy-destination storage area;

5   wherein said source storage device and said destination storage device is coupled each other through communication devices;

wherein said source storage device and said destination device has a memory stored data copy program;

10   wherein the memory of said source storage device is stored possible data arrangement range information for the data in said copy-source storage area and volume range information for said copy-destination storage area;

wherein said destination storage device transmits

15   said volume range information for said copy-destination storage area to said source storage device, and said source storage device judges whether or not the range indicated by said possible data arrangement range information for the data in said copy-source storage area is within the range

20   indicated said volume range information for said copy-destination storage area by referring to said possible data arrangement range information stored in said memory; and

wherein said source storage device transmits copy data to said destination storage device in case of judging

that the range indicated said volume range information for
said copy-destination storage area is within the range
indicated by said possible data arrangement range
information for the data in said copy-source storage area.

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     22 A data processing system according to 21,

     wherein group definition information is stored in the
memory of said source storage device, and said possible
data arrangement range information can be defined by said
10   group definition information.